

IL 12-2003-004

In Reply Refer To: 12

May 14, 2003

OFFICE OF RESEARCH AND DEVELOPMENT INFORMATION LETTER

**SOLICITATION OF APPLICATION FOR
REHABILITATION ENHANCING ACTIVITY-DEPENDENT PLASTICITY**

1. This Information Letter announces the opportunity for clinician and/or scientists within the Department of Veterans Affairs to submit proposals for funding of rigorous clinical studies of modalities for overcoming paralysis and restoring motor function in Veterans with nervous system disease or damage.
2. An important goal of Rehabilitation Research and Development Service (RR&D) is to document and define the impact of traditional rehabilitation treatment and improve outcomes. Techniques include: development of new technology, new applications of existing technology, rehabilitation therapy, pharmacotherapy, and other clinical techniques. **NOTE:** *This solicitation is in accordance with Title 38 United States Code (U.S.C.) §7303.*
3. Recent scientific discoveries suggest that activity-dependent plasticity is present in the adult human nervous system, and that intensive-specific rehabilitation treatments can lead to restoration of motor function. Early in development, spinal cord reflex patterns are driven by descending activity. Later in life, athletic training results in gradual improvements in spinal reflexes supported by changes in motoneuron firing threshold and axonal conduction velocities. This plasticity occurs at multiple sites, throughout life during homeostasis, and in response to injury. As a result, VA seeks to examine approaches to rehabilitation for patients with spinal cord injury (SCI), stroke, neurodegenerative disorders, and multiple sclerosis (MS).
4. RR&D accepts research proposals that focus on the creation and use of structures, devices, systems or multidisciplinary plans of action that capitalize on activity-dependent plasticity in the spinal cord following injury, ischemia, or degeneration.
5. Investigations that challenge existing paradigms and could potentially reveal new targets for therapeutic exploration are encouraged.
6. Examples of priority research areas include, but are not restricted to:
 - a. Body weight supported treadmill training (including robotic therapies);
 - b. "Mass-practice" approaches in upper and lower-extremity paresis or paralysis (including robotic and virtual environment techniques);
 - c. Neuropharmacologic treatments;

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- d. Functional electrical stimulation;
 - e. Neuro-imaging and other quantitative approaches to assess recovery;
 - f. Planning grants to develop hypotheses and collaborations;
 - g. Neuro-rehabilitation and neurologic repair; and
 - h. Medical informatics, E-health, etc.
7. It is anticipated that the research projects that will be most responsive to this solicitation will require multisite interdisciplinary collaborations in a range of disciplines, including, but not limited to: physicians, engineering, physical therapy, and rehabilitation nursing.
8. Investigations that combine functional electrical stimulation, robotics, electromyography, imaging, quantitation, measurements, body weight supported treadmill training, aquatic therapy, endocrine therapy, motor learning, motor strength and cognitive behavioral therapy will be given high priority. **NOTE:** *This is not meant to be an exhaustive, exclusive, or delimiting set of topics; rather these merely represent illustrations of topics considered relevant to this solicitation.*
9. Research proposals will be scientifically reviewed for merit to objectively determine relevance to the veteran population, capability of applicant to meet intended outcome of proposed research program, and potential contribution of proposed research to the field of rehabilitation and ultimately, quality of life to veterans. Criteria for review and evaluation are:
- a. Relevance to veteran population,
 - b. Relevance of stated hypothesis to the mission of RR&D,
 - c. Relationship of stated hypothesis to proposed research activities and/or methodologies
 - d. Potential of proposed research plan to produce new and beneficial information with the expectation for therapeutic intervention and exponential increase in research findings,
 - e. Incorporation of expertise required to carry out all facets of the proposed research plan,
 - f. Contribution to overall Department of Veterans Affairs (VA) RR&D portfolio,
 - g. Appropriateness and statistical significance of VA patient pool,
 - h. Adequacy of VA facilities and equipment,
 - i. Ability of budget to cover all reasonable costs related to the proposal, and
 - j. Appropriateness and detail of subcontract (if required)

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10. All reasonable equipment (i.e., FES, Lokomat ®), will be made available to investigators.

11. All proposals are contingent upon the availability of funds

12. Important Due Dates:

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| a. Letters of Intent: | June 15, 2003 |
| b. Proposals due at RR&D Service: | November 1, 2003 |
| c. Review: | January 2004 |
| d. Projected funding date: | April 2004 |

13. See Attachment A for requirements.

14. Applications and instructions for the RR&D standard review process can be located via the RR&D website at <http://www.vard.org>. Direct questions about scientific and/or research issues to:

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S/ Gloria Winford for
Nelda P. Wray, M.D., M.P.H.
Chief Research and Development Officer

Attachment

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ATTACHMENT A

REQUIREMENTS

1. Proposals must incorporate proven techniques for adequate analysis and dissemination of results in leading peer-reviewed journals. Therefore proposals must:
 - a. Use adequate subject pools,
 - b. Incorporate rigorous statistical analyses, and
 - c. Clearly define outcomes.
2. Although preliminary data in support of the studies is not required, a demonstration of previous research, sound rationale, and appropriate expertise is expected.
3. Principal investigator (PI) and co-principal investigators (Co-PIs) must have Ph.D. and/or M.D. degrees and at least a 5/8th VA appointment.
4. All applicants must submit a Letter of Intent (LOI) for the regular January Merit Review by June 15, 2003. LOIs must be directed through the Associate Chief of Staff (ACOS) for Research and include:
 - a. Names of key investigators (PI, Co-PI, co-investigators),
 - b. Brief background,
 - c. Clearly stated hypothesis,
 - d. Outline of Methods,
 - e. Estimated Budget, and
 - f. Appropriate references.
5. This Request for Proposals (RFP) will use Program Funding (822). The applicant must be solely responsible for planning, directing, and executing the proposed project. The applicant may request up to \$750, 000 direct costs per year for 5 years.